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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,857	12/29/2005	Guojun Dai	09877.0364	6423
22852	7590	07/28/2010		
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER HOFFMANN, JOHN M	
			ART UNIT	PAPER NUMBER
			1791	
			MAIL DATE	DELIVERY MODE
			07/28/2010	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/562,857

**Applicant(s)**

DAI ET AL.

**Examiner**

John Hoffmann

**Art Unit**

1791

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-20 and 22-28 is/are pending in the application.
- 4a) Of the above claim(s) 25-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-20 and 22-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/24/2010 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jakobsen WO 03/078338 in view of Fogliani 2004/0237585.

Jakobsen teaches the invention as claimed, except for the density. See Jakobsen page 39, lines 12-23 as well as figure 5. However Jakobsen does not teach the density. Fogaliani teaches at [0008] that the density should be between 0.6 and 0.8 g/cc, or else it will be too soft and tends to break, or if it is of a higher density, there will be too much high hardness and air bubbles will remain. It would have been obvious to

perform the Jakobsen method so that soot density is between .6 and 0.8 g/cc so as to avoid the problems associated with densities outside the range - as taught by Jakobsen.

Claim 16 requires a maximum variation of 4 %. Examiner assumes that it means that the maximum variation can be no higher than 4% - but it does not actually require such a variation. Fogaliani teaches that is known to keep variations down to 0.5% (see [0014]) and to control the density so as to prevent risks of cracking, cleavage and bubbles [0016], and that the density can be "precisely controlled" [0017]. It would have been obvious to control the density variation down to 0.5%, since such is achievable and so as to prevent bubbles, cracks and cleavage.

Claim 17 See the "5<sup>th</sup> aspect" starting on page13 of Jakobsen. The "sintering" anticipates the claimed consolidation.

Claim 18: See Jakobsen, page 14, lines 28-30. Examiner expects applicant's "dehydrafon" (sic) would be interpreted as "dehydration" by one of ordinary skill in the art.

Claims 19-20: See Jakobsen, page14, lines 20-22.

Claim 22: [0009] of Jakobsen indicates that 0.6-0.7 is the preferred range, thus it would have been obvious to have the class with in the range since such is preferred. Alternatively: it would have been obvious to perform routine experimentation to determine the optimal density – depending upon the exact composition and the processing steps used, since Jakobsen teaches it is a result effective variable which effects strength and bubbles.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jakobsen WO 03/078338 in view of Fogliani 2004/0237585 as applied to claim 15 above, and further in view of Ito 5196383.

Jakobsen teaches the use of solgel bodies (e.g. page 39, lines 25-35), but not the density. As per figure 1 of Ito, densities in the 0.5-0.7 are achievable with sol gel bodies. It would have been obvious to perform the Jakobsen process with a density in the 0.6-0.7 range, since Fogliani teaches that such a density is an optimal density for porous glass bodies. Alternatively, since Fogliani teaches that density is a result-effective variable, it would have been obvious to perform routine experimentation to determine the optimal density in the Jakobseon solgel body.

### ***Response to Arguments***

Applicant's arguments filed 6/24/2010 have been fully considered but they are not persuasive.

The arguments refer to the November 10, 2009 Office action. That Office action is largely moot because the prior art applied in that rejection is different from the art currently being applied. Examiner notes the first rejection was based on one Jakobsen reference. The second rejection 3/26/2010 utilized a different Jakobsen reference.

Likewise applicant refers to pages 7-8 of the present specification as discussing Jakobsen. This too does not appear to be very relevant because the current rejection is based on a different Jakobsen patent.

It is argued that Jakobsen does not teach drilling a hole extending through a porous preform. Examiner disagrees, page 39, lines 12-23 along with figure 5 (of Jakobsen WO 03/078338) clearly discloses drilling holes in a porous preform as claimed.

As to the argument that Jakobsen teaches to use laser ablation with a solid rod: this is not very relevant because Jakobsen (also) teaches drilling a porous preform as claimed.

As to the argument regarding drilling before consolidation: it is clear that the Jakobsen preform had not be yet consolidated. Moreover, the claim does not require a step of consolidation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Thursday, roughly 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Hoffmann  
Primary Examiner  
Art Unit 1791

/John Hoffmann/  
Primary Examiner, Art Unit 1791